

Claims

1. Method for storing data as bit cells in a prerecorded area of an optical recording medium using pits (6) and lands (7), whereby the pits (6) and lands (7) are placed out of the center of a track of the prerecorded area, **characterized in that** the method comprises the step of arranging the pits (6) and lands (7) adjacent to bit cell signal transitions (1, 2, 3, 4) in a predefined manner.
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2. Method according to claim 1, **characterized in that** the pits (6) and lands (7) are arranged in a fixed recurring sequence of pit lengths and land lengths at the bit cell signal transitions (1, 2, 3, 4).
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3. Method according to claim 1, **characterized in that** the pits (6) are arranged symmetrically to the bit cell signal transitions (1, 2, 3, 4).
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4. Method according to claim 3, **further comprising** the step of arranging the lands (7) adjacent to the pits (6) symmetrically to the bit cell signal transitions (1, 2, 3, 4).
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5. Method according to anyone of the preceding claims, **further comprising** the step of placing an identical number of pits (6) and lands (7) in each bit cell.
- 30 6. Method according to anyone of the preceding claims, **further comprising** the step of setting the lengths of the pits (6) and lands (7) to integer multiples of a predefined length based on a nominal channel clock (T) and a nominal rotational speed of the recording medium.
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7. Method according to anyone of the preceding claims, **further comprising** the step of inserting a gap 8 at the bit cell signal transitions (1, 2, 3, 4).
- 5 8. Method according to anyone of claims 1-7, **further comprising** the step of arranging pits (6), which are long compared with the diameter of a readout spot, near the bit cell signal transitions (1, 2, 3, 4).
- 10 9. Method according to claim 8, **further comprising** the step of arranging lands (7), which are short compared with the diameter of the readout spot, within the bit cell.
- 15 10. Method according to anyone of claims 1-7, **further comprising** the step of arranging pits (6) with a length corresponding to the full width at half maximum of the intensity distribution of the readout spot near the bit cell signal transitions (1, 2, 3, 4).
- 20 11. Method according to anyone of claims 8-10, **further comprising** the step of arranging pits (6), which are short compared with the diameter of a readout spot, within the bit cell.
- 25 12. Method according to anyone of the preceding claims, **further comprising** the step of varying the distance between the track center (10) and the pits (6) and lands (7).
- 30 13. Method according to anyone of the preceding claims, **further comprising** the step of varying the width of the pits (6).
- 35 14. Method according to anyone of the preceding claims, **characterized in that** the average of a modulation

signal containing the stored data is zero for bit cells representing a digital '1' and zero for two consecutive bit cells representing a digital '0'.

5 15. Optical recording medium, **characterized in that** it comprises at least one prerecorded area in which data is stored according to a method according to anyone of claims 1-14.

10 16. Apparatus for reading from optical recording media, **characterized in that** it comprises means for retrieving data stored in at least one prerecorded area of an optical recording medium according to a method according to anyone of claims 1-14.

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17. Apparatus for writing to optical recording media, **characterized in that** it comprises means for writing data to optical recording media according to a method according to anyone of claims 1-14.

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